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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,752	12/19/2001	Yeun-Renn Ting	JCLA8476	9113

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Irvine, CA 92618

EXAMINER

ABRAHAM, ESAW T

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,752

Applicant(s)

TING ET AL.

Examiner

Esaw T Abraham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-4 are presented for examination.

Specification

2. The **title** of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) Claim 1 recites "the communication system" instead of "a communication system".

There is insufficient antecedent basis for this limitation in the claim.

b) Claim 1 recites "the device" which is inconsistent with what was previously recited (i.e. "encoding device ") (see page 8, line 1) Therefore, the recitation lack an antecedent basis.

c) Claim 1 recites "the encoding process" instead of "an encoding process") (see page 8, line 2). Therefore, the recitation lack an antecedent basis.

d) Claim 1 recites "the sequential input" instead of "a sequential input" (see page 8, line 3). Therefore, the recitation lack an antecedent basis.

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e) Claim 1 recites “the input bit sequence” which is inconsistent with what was previously recited (i.e. “an input bit sequence”) (see page 8, line 3). Therefore, the recitation lack an antecedent basis.

f) Claim 1 recites “the input bit ” which is inconsistent with what was previously recited (i.e. “the input bit sequence” (see page 8, line 4). Therefore, the recitation lack an antecedent basis.

g) Claim 1 recites “the segment length ” instead of “a segment length” (see page 8, line 6). Therefore, the recitation lack an antecedent basis.

h) Claim 1 recites “the parameter ” instead of “a parameter” (see page 8, line 14). Therefore, the recitation lack an antecedent basis.

i) Claim 2 recites, “M is the memory ” instead of “M is a memory” (see page 8, line 20). Therefore, the recitation lack an antecedent basis.

j) Claim 4 recites “the binary numbers ” instead of “binary numbers” (see page 9, line 10). Therefore, the recitation lack an antecedent basis.

k) The term, “the element ” (see page 8, line 15 of claim 1) is not clear if the applicant is trying to refer to the first encoder feed-forward generator or other elements. The examiner would appreciate if the applicant would clarify this matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berrou (U.S. PN: 5,446,747) in view of Claude Berrou (Near Optimum Error Correcting Coding And Decoding: Turbo Coding, IEEE).

As per claim 1, Berrou in figure 1 teaches or discloses a block diagram of a coder comprising a source data element (d) to be coded in a first systematic coding (11) and toward a temporal interleaving module (12) which itself feed a second systematic coding (13) and there are at least two coded data elements Y_1 and Y_2 , coming from the distinct coders (11 and 13), associated with each source data element (see col. 7, lines 47-67). Berrou **does not explicitly** teach that the first and the second systematic coders comply with a formula (see the formula as in claim 1). **However**, Berrou teaches a turbo coder comprising two systematic encoders (see the

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figure on page 1264 of Berrou's IEEE,) employing the same formula used by the applicant (see the third paragraph on page 1262 of Berrou's IEEE,). **Therefore**, it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to implement the teachings of Berrou (5,446,747) included a formula that comply with the systematic convolution encoders as taught by Berrou (see Berrou's IEEE). **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated in order to obtain high coding gains in the encoding system.

As per claims 2-4, Berrou (5,446,747) in view of Berrou (see Berrou's, IEEE) teaches all the subject matter claimed in claim 1 including Berrou (see Berrou's IEEE) teach a binary rate convolutional encoder with constraint length K and memory v whereby the input to the encoder at time k is a bit d_k the corresponding binary couple (X_k, Y_k) is equal to a formula (see the formulas and steps on page 1262 of Berrou's, IEEE).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,298,463 Bingeman et al.

US PN: 6,289,486 Lee et al.


US PN: 6,574,767 Erooz et al.

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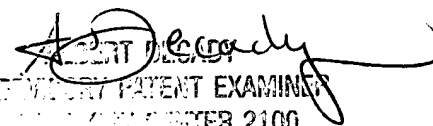
6. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.


Esaw Abraham

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ALBERT DECADY
SUPERVISORY PATENT EXAMINER
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